DOCUMENT RESUME

ED 156 029 HE 010 145

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TITLE ACT Assessment Results: Persisters vs. Non-persisters.
INSTITUTION Grand Valley State Colleges, Allendale, Mich. Office of Institutional Analysis.
PUB DATE Aug 75
NOTE 11p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Academic Aspiration; *Attrition (Research Studies); *Cluster Colleges; Cocurricular Activities; College Choice; *College Freshmen; College Majors; Dropout Research; Educational Needs; Financial Needs; Grades (Scholastic); Higher Education; Institutional Research; Occupational Choice; *Persistence; Research Projects; *State Colleges
IDENTIFIERS American College Test; *Grand Valley State Colleges MI

ABSTRACT

The American College Test (ACT) assessment results for 441 freshmen who entered Grand Valley State Colleges (GVSC) in fall 1973, and who were still enrolled in fall 1974 were compared to the results for 324 freshmen who entered GVSC in fall 1973 and who were not enrolled in fall 1974. Comparisons were made of ACT test scores, self-reported high school grades, proposed educational major, first vocational choice, level of educational aspiration, educational needs, needs help in, out of class achievements while in high school, extracurricular plans for college, financial needs, single most important factor in choice of college, size of high school graduating class, and rank of GVSC as college choice. (SPG)

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ACT Assessment Results: Persisters vs. Non-persisters

An analysis of ACT Assessment results for freshmen who entered Fall, 1973, who were still enrolled Fall, 1974, compared to those who were not enrolled one year later.

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Office of Institutional Research

R. Bruce Tweddale

August, 1975

HE 010 145

Background

During the Fall of 1973, 1,126 new FTIAC's (first time in any college freshmen) enrolled in GVSC as new students. Of this total, we had assessment results on the American College Test for 767. After a period of one year, when enrollment for Fall, 1974 was stabilized, the 767 ACT Assessment results were divided into two groups: "enrolled" and "not enrolled". We thus ended up with 324 students in the "not enrolled" group, 441 in the "enrolled" group, and 2 whose results were discarded because of an unclear status.

Now that the group of 1973 ACT results was divided into those who persisted over one complete year, and those who did not, our next step was to compare the two groups on the ACT Assessment categories to see if the groups differed on any of the attributes. This means that the comparison between the two groups will be made for the ACT ability measures as well as for many of the background characteristics which the student indicates when he takes an ACT Assessment. The characteristics which were selected for comparison out of the total array in the ACT Assessment were those thought to have the greatest possibility of affecting persistence.

Both mean differences and proportional differences were tested at the 95% confidence level. Therefore, references to statistical significance in the text of this report will always refer to this confidence level. Any differences which test at less than the 95% confidence will be considered "not significant" in order to avoid jumping to possible unwarranted conclusions about small differences.

ACT Test Scores

Test	Mean "Enrolled" Score	Mean "Not Enrolled" Score
English	19.96	19.01
Math	20.86	19.61
Social Studies	21.18	19.92
Natural Science	22.61	21.27
Composite	21.28	20.09

N - Enrolled = 441
N - Not Enrolled = 324

It can be seen that the enrolled group had higher mean scores on all of the ACT tests and on the composite score than did the not enrolled group. Each of the differences is significant. This tends to confirm other research findings as well as intuitive judgment. It seems to make sense that students with higher ability or academic potential levels would be less likely to be attrition casualities. They are likely to be successful in their academic pursuits. With success as a reward for their efforts, they are likely to continue such activities.

Self-Reported High School Grades

Area	Mean "Enrolled" Grade	Mean "Not Enrolled" Grade
English	3.20	3.07
Math	2.58	2.37
Social Studies	3.31	3.10
Natural Science	2.88	2.66
Average	2.93	2.77

N - Enrolled = 432
N - Not Enrolled = 324

As with ACT test scores, the self-reported high school grades were significantly higher in every category for those students still enrolled Fall, 1974 as opposed to those who were not. Since grades and ability test scores correlate so highly, it is not surprising that these results parallel what we found above on ACT test scores.

Proposed Educational Major

Area	Enrolled #	Enrolled %	Not Enrolled #	Not Enrolled %
Education	74	16.7	60	18.5
Social Science & Religion	59	13.4	59	18.2
Business, Political, Persuasive	66	15.0	45	13.9
Scientific	40	9.1	22	6.8
Agriculture	7	1.6	5	1.5
Health Sciences	75	16.9	47	14.5
Arts & Humanities	67	15.2	44	13.6
Engineering	11	2.5	7	2.2
Trade & Industrial	3	0.7	4	1.2
Other	2	0.5	0	0.0
Undecided	37	8.4	31	9.6
Total	441	100.0	324	100.0

Although there are some small variations in percentage in the various proposed educational major areas, between enrolled and not enrolled students, none of the differences are large enough to be significant. Evidently, proposed major is not a factor in persistence.

First Vocational Choice

Area	Enrolled #	Enrolled %	Not Enrolled #	Not Enrolled %
Education	76	17.2	69	21.4
Social Science & Religion	53	12.0	48	14.8
Business, Political, Persuasive	74	16.8	42	13.0
Scientific	25	5.7	10	3.1
Agriculture	10	2.3	5	1.5
Health Sciences	73	16.6	51	15.7
Arts & Humanities	42	9.5	28	8.6
Engineering	9	2.0	7	2.2
Trade & Industrial	8	1.8	10	3.1
Other	12	2.7	5	1.5
Housewife	1	0.2	1	0.3
Undecided	58	13.2	48	14.8
Total	441	100.0	324	100.0

Again we see some slight variations in the percentage between students enrolled and those not enrolled in the various areas of first vocational choice. However, none of the differences are significant. As with proposed major, the students vocational choice does not appear to be a factor in persistence.

Level of Educational Aspiration

Level	Enrolled #	Enrolled %	Not Enrolled #	Not Enrolled %
High School Diploma	5	1.1	5	1.6
Less Than 2 Years of College	1	0.2	0	0.0
Two Year College Degree	15	3.4	14	4.4
Bachelor's Degree	250	57.4	195	60.8
Master's Degree	105	24.2	56	17.5
Dr. of Phil. or Educ.	20	4.6	14	4.4
Dr. of Medicine	18	4.1	12	3.8
Law Degree	15	3.4	16	5.0
Theology Degree	1	0.2	1	0.3
Other	6	1.4	7	2.2
Total	436	100.0	320	100.0

The only significant difference in percentage between students enrolled vs. those not enrolled is at the master's degree level. Persisters have a higher percentage aspiring for a master's degree than non-persisters.

Educational Needs

Students indicated whether they wished to be considered for special programs as follows:

Wants to Be Considered For Special Program In:	Enrolled #	Enrolled %	Not Enrolled #	Not Enrolled %
Independent Study	213	48.3	161	49.7
Honors Program	116	26.3	65	20.1
Advanced Placement - English	80	18.1	56	17.3
Advanced Placement - Math	64	14.5	27	8.3

N - Enrolled = 441
N - Not Enrolled = 324

The differences in percentage of enrolled as opposed to not enrolled are significant for those wanting to be considered for Honors Programs and Advanced Placement in Math, while the differences in the other two categories are not significant. A greater percentage of the persisters indicated interest in Honors and Advanced Placement in Math than did the non-persisters. This fact seems to tie in with the other measures of academic potential above which also are positively related to persistance.

Students taking the ACT Assessment also indicated whether they needed special help in the following areas:

Needs Help In	Enrolled #	Enrolled %	Not Enrolled #	Not Enrolled %
Choosing a Major	118	26.8	94	29.0
Reading Skills	62	14.1	48	14.8
Math Skills	155	35.1	138	42.6
Study Skills	88	20.0	86	26.5
Writing Skills	106	24.0	88	27.2

N - Enrolled = 441
N - Not Enrolled = 324

Here we find two areas where the difference in percentages between enrolled and not enrolled are significant. A higher percentage of not enrolled students indicated they needed help in the areas of Math and study skills than did the enrolled students. This leads one to wonder why the same is not true in the other two skill areas mentioned, namely reading and writing skills. One explanation might be that there is a greater recognition of deficiency in math skills compared to the other two areas.

Out of Class Achievements While in High School

Mean Number of Achievements

Area	Enrolled	Not Enrolled
Athletics	2.59	2.51
Work Experience	2.69	3.12
Practical Skills	2.91	3.01
Leadership	2.27	2.13
Music	2.03	1.94
Speech	1.00	1.00
Art	0.93	1.06
Writing	1.13	1.18
Science	0.58	0.51

The only area where the difference in the mean number of out of class experience is significantly different between enrolled and not enrolled students is in "work experience". Students who did not persist from Fall, 1973 to Fall, 1974 had a higher number of work experiences in high school years than did the persisters. This fact could be accounted for by one of the following hypotheses:

a. Students with the most number of work experiences in high school come from less affluent backgrounds, and are more likely to have financial problems while in college.

b. Students with many work experiences in high school are less likely to view a college education as the only route to their goals. In the event that college is not challenging enough (or too challenging, as the case may be), they are more likely to drop out for employment or other kinds of educational activities.

Extracurricular Plans For College

Area	Enrolled		Not Enrolled	
	#	%	#	%
Music, Instrumental	78	17.7	63	19.4
Music, Vocal	74	16.8	119	36.7
Publications	138	31.3	91	28.1
Student Government	153	34.7	79	24.4
Debate	55	12.5	27	8.3
Ethnic Organizations	68	15.4	35	10.8
Fraternities or Sororities	95	21.5	42	13.0
Religious Organizations	144	32.7	88	27.2

N - Enrolled = 441
N - Not Enrolled = 324

There are three areas where the percentage difference between enrolled and not enrolled students is significant.

a. A higher percentage of non-persisters were interested in vocal music than was true for the persisters. This might be the result of the size of our program compared to other local institutions.

b. A higher percentage of the enrolled students were interested in student government and fraternities and sororities than was the case for non-enrolled students.

Financial Needs

Need	Enrolled		Not Enrolled	
	#	%	#	%
Expects to apply for financial aid	254	57.6	169	52.2
Expects to apply for financial aid, but not the first year	46	10.4	25	7.7
Needs employment	177	40.1	130	40.1

N - Enrolled = 441
N - Not Enrolled = 423

None of the differences between persisters and non-persisters is significant.

Single Most Important Factor in Choice of College

Factor	Enrolled		Not Enrolled	
	#	%	#	%
Intellectual Atmosphere	20	4.8	24	7.8
Good Faculty	12	2.9	7	2.3
High Standards	12	2.9	14	4.5
Special Study Programs	147	35.2	87	28.1
Social Opportunities	11	2.6	14	4.5
Good Athletic Program	8	1.9	14	4.5
Low Cost	19	4.5	12	3.9
Financial Aid	14	3.3	10	3.2
Location	60	14.4	34	11.0
Size	26	6.2	21	6.8
Influence of Parents	40	9.6	20	6.5
Influence of High School Teacher	5	1.2	4	1.3
Influence of High School Counselor	14	3.3	9	2.9
Influence of College Admissions	3	0.7	3	1.0
Campus Visit	27	6.5	36	11.7
Total	418	100.0	309	100.0

There are only three areas where the percentage differences between enrolled and not enrolled students is significant.

a. A higher proportion of enrolled students said that Special Study Program availability was the most important factor in their choice of college.

b. A higher proportion of non-enrolled students indicated that either a Good Athletic Program or Campus Visit was the most important factor.

This seems to say that those indicating that a programmatic factor was most important are more likely to persist while those who indicate either athletics on a campus visit are more likely to be non-persisters.

Size of High School Graduating Class

Class Size	Enrolled		Not Enrolled	
	#	%	#	%
Fewer than 25	10	2.4	3	0.9
25 - 99	41	9.8	46	14.6
100 - 399	273	64.9	184	58.2
400 and over	96	22.9	83	26.3
Total	420	100.0	316	100.0

None of the differences in percentage between enrolled and non-enrolled are significant except for the class size of 25 - 99. A higher percentage of the non-enrolled group had this size of graduating class than did the enrolled group.

Rank of GVSC as College Choice

Choice	Enrolled		Not Enrolled	
	#	%	#	%
First	336	85.3	255	88.5
Second	45	11.4	23	8.0
Third	13	3.3	10	3.5
Total	394	100.0	288	100.0

None of the differences in percentage between enrolled and not enrolled are significant. Evidently whether GVSC is the first, second, or third choice of the student is not a factor in persistence.

Correlations Between Characteristics and Persistence

In an effort to determine the strength of the relationship between persistence and the various characteristics where a significant difference between the responses of enrolled and non-enrolled students exist, the following correlations were calculated:

Stength of Relationship When Significant Differences Exist

Between Persisters and Non-Persisters

Characteristic	Correlation	Technique
ACT Composite Score	0.12	point biserial
Average of 4 High School Grades	0.12	point biserial
Educational Aspiration - Masters	0.08	phi coefficient
Educational Need - Honors Program	0.07	phi coefficient
Educational Need - Adv. Pl. Math	0.09	phi coefficient
Needs Help - Math	-0.08	phi coefficient
Needs Help - Study Skills	-0.08	phi coefficient
Out of Class Achievements - Work Exp.	-0.11	point biserial
Extracurricular - Vocal Music	-0.23	phi coefficient
Extracurricular - Student Government	0.11	phi coefficient
Extracurricular - Frats. & Sororities	0.11	phi coefficient
College Selection Factor - Special Study Program	0.07	phi coefficient
College Selection Factor - Athletics	-0.08	phi coefficient
College Selection Factor - Campus Visit	-0.09	phi coefficient
Size of Graduating Class 25 - 99	-0.07	phi coefficient

Although each of the relationships is statistically significant, the correlations are not strong enough to be of much value in trying to predict whether or not any given new student who enrolls one fall will still be enrolled the next fall.

Summary

A review of the ACT scores and other student characteristics gathered during the ACT Assessment for students who entered GVSC during Fall, 1973 reveals that there are a few areas where those students who were still enrolled Fall, 1974 differed from those who were not. Compared to the non-persisters (those not enrolled one year later), the persisters, as a group, have the following charactertistics:

1. Higher ACT scores.
2. Higher self-reported high school grades.
3. Are more prone to seek a master's degree.
4. Indicate a greater interest in honor programs and advanced placement in mathematics.
5. Feel less need for special help in mathematics and study skills.
6. Have fewer work experiences while in high school.
7. Express less interest in the extracurricular area of vocal music and more interest in student government and fraternities and sororities.
8. Are more likely to select a college because of special study programs and less likely to select one on the basis of its athletic program on a campus visit.
9. Are less likely to come from a high school graduating class of 25 - 99 students.

The relationship between these factors and persistence is statistically significant, but not of the magnitude necessary for individaul predictions of persistence.

This picture of the persister generally depicts one of students who have an academic - collegiate orientation. They have had and continue to have success in academic studies and generally orient towards critical collegiate educational experiences (e.g. fraternities or sororities, honors programs, specific academic programs).